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Economies of Size and Family Farm Survival in the New Global Economic Order

by
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Introduction

Serious concerns have been raised regarding the ability of the family farm to survive in a new global economic order of intense economic competition. Technological, managerial, and asset requirements are high. Economies of size are apparent. The challenge of refinancing a family farm each generation is daunting. Yet this paper makes a case that the American family farm is resilient and will survive, although in diminishing numbers. I first define the terms "farm structure" and "family farm". Unless otherwise stated, the discussion refers to American agriculture.

Farm Structure

Structure here refers to size, number, type, legal organization, and tenure of farms. Structure includes institutional arrangements: markets in which farmers buy and sell and public policies that regulate, tax, subsidize, or in other ways shape agriculture. Past interventions include land distribution (e.g. Homestead Act of 1862) and public research, education, commodity program, and trade policies.

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The Family Farm Ideal

The family farm is the focal point of much of the structure debate. The many Americans who prize the family farm do not necessarily agree on its definition. To many Americans it *ideally* is a crop and/or livestock producing unit where the operator and his/her family (see Tweeten (1984) for definition and Sumner for a protest to that definition):

* *control most of the decisions*. (The sole proprietorship legal organization is preferred to a large corporation, coordination by the market is preferred to vertical integration, and ownership by the operator is preferred to tenancy.)
* *supply over half of the labor.*
* *supply over half of the equity capital.*
* *derive over half of their income from farming.*

Society ideally would like to have *as many family farms as possible* subject to the constraint that food be provided efficiently at affordable cost particularly for the benefit of low-income consumers. The public would like to see family farms *receive comparable economic rewards* to those of nonfarmers. It wants farmers to *practice sound environmental stewardship.*

An *economic unit* is defined as a farming operation just large enough to provide full-time employment for a farm family (with some seasonal hiring in and out), realize most economies of farm size, and realize a family income comparable to that of nonfarm families.

Will the Family Farm Survive?

Family farm survival depends on economic vitality and economies of size as well as other factors. Subsidiary questions include:

* Is survival of the family farm threatened by low income, low prices, low wealth, low rates of return on farming resources, and economies of size?

* Do commodity programs help or hinder survival of family farms? Does the trend toward a more market-oriented agriculture apparent in 1990 farm legislation and ultimately an absence of farm price and income supports, supply controls, and trade interventions threaten family farm survival?

* What public policies would be necessary to maintain or increase the number of family farms? Would economic benefits exceed economic costs of such policies?

Economic Vitality

In measuring economic vitality, it is essential to recognize the diversity of American agriculture. Although annual crop and livestock sales volume is not necessarily the best indicator of farm size, the measure's ready availability suggests its use in examining farm income, the balance sheet, and rates of return.

Income and Expenses. Several observations are apparent from the 1989 data in Table 1:

1. Farm production as measured by receipts is highly concentrated on large farms. Large farms (sales over $250,000 per farm) accounting for 5.2 percent of all farms accounted for 55.4 percent of production as measured by cash receipts from crops, livestock, and other farm-related income. Rural residences (sales under $10,000 per farm) accounting for 47.0 percent of all farms accounted for only 2.8 percent of production.

2. Government payments are greatest *per farm* on large farms but are greatest *per unit of production* on medium and small farms. Payments averaged $28,611 per large farm but only $0.03 per dollar of production in 1989. Payments averaged $16,630 per medium-size farm but $0.10 per dollar of production. Payments to rural residences averaged only $297 per farm but $0.06 per dollar of production.

3. Cash farm expenses were less concentrated on large farms than was output. Large farms accounting for 55.4 percent of production accounted for 52.0 percent of cash expenses in 1989. Rural residences with only 2.8 percent of production accounted for 4.9 percent of cash expenses. Costs for operator and unpaid family labor, management, and equity capital are not included.

Such costs are more concentrated on small farms than are cash expenses. It follows as shown later that full economic costs per unit of production (valued at what resources would earn elsewhere -- opportunity cost) are much higher on small farms than on large farms (see Tweeten, 1989a, p. 93).

Table 1. Income and Expenses of Farms by Economic Class, 1989.

Item	Value of Sales ($1,000)				
	Large $250 & Over	Medium $100 to $250	Small $10 to $100	Rural Residences Less than $10	Total
Number of Farms (1,000)	113	211	828	1,019	2,171
(Percent of All Farms)	(5.2)	(9.7)	(38.1)	(47.0)	(100.0)
			(Dollars per farm)		
Cash Receipts	817,372	164,706	42,014	4,599	76,734
(Percent of All Receipts)	(55.4)	(20.9)	(20.9)	(2.8)	(100.0)
Government Payments	28,611	16,630	4,640	297	5,015
(Percent of All Payments)	(29.7)	(32.2)	(35.3)	(2.8)	(100.0)
$ Payments / $ Receipts	[0.03]	[0.10]	[0.11]	[0.06]	[0.07]
Gross Cash Income	845,983	181,336	46,654	4,896	81,749
Cash Expenses	564,805	118,137	33,777	5,982	56,570
(Percent of All Expenses)	(52.0)	(20.3)	(22.8)	(4.9)	(100.0)
Net Cash Income	281,178	63,199	12,877	-1,086	25,179
Off-farm Income	22,920	17,531	23,394	31,246	26,485
Total Cash Income	304,098	80,730	36,271	30,160	51,664
(Percent of Cash Income)	(30.6)	(15.2)	(26.8)	(27.4)	(100.0)

Source: USDA, January 1991.

4. Income per farm compares favorably with income of nonfarmers. In economic equilibrium, a reasonably well-managed, adequate size farm is expected to earn at least as much as similar resources earn elsewhere. In 1989, total cash income of small farms and rural residences averaged near the $34,213 median income of all U.S. families (Council of Economic Advisors,

p. 320).[1] The medium-size farm (sales of $100,000 to $250,000), which I call the *quintessential family farm*, represents an economic unit. It is large enough to employ a full-time operator and family supplemented by minimal hired labor in peak periods. That quintessential family farm, with net cash income from all sources averaging $80,730 in 1989, had favorable income -- judging by almost any standard. Large farms did much better but many support more than one operator family, hence sales classes in Table 1 exaggerate differences in income *per family*.

5. Off-farm income is critical to the economic livelihood of the majority of farm families. Small farms and rural residences, accounting for 85 percent of all farms, on average received the majority of their income from off-farm sources. Many such families might be properly classified not as farmers but as machinists, mechanics, physicians, teachers, or by whatever other occupation supplies most of their income.

6. Rural residences had negative net farm income in 1989, even before subtracting costs of operator and unpaid family labor, management, and equity capital. I discuss later why that loss, and the fact that total resource costs tend to be about double farming returns, does not necessarily imply economic disequilibrium.

The year 1989 was above average. However, net income from all sources of families on the quintessential family farm consistently exceeded median U.S. income in the late 1980s. Poverty is rare on *commercial* farms (sales over $100,000) because such firms cannot exist for long without considerable net worth and assets.

Balance Sheet. Notable observations from balance sheet data in Table 2 are that:

1. Farming is a highly capital intensive industry. Assets per farm averaged $447,827 over all farms and $810,318 on medium size farms in 1989.

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[1] An advantage of the positivistic cost curves is that actual ratios of economic costs to revenues indicate "what is" rather than "what ought to be", include some market as well as production economies of size, and record some of the transportation inefficiencies of small farms (some fuel and vehicle commuting costs for shopping, recreation, etc. are picked up in surveys). A disadvantage is that management quality and other controls are not held constant. The so called "engineering studies" attempt to correct the latter shortcoming.

Table 2. Balance Sheet (Including Operator Household) of Farms by Economic Class, December 31, 1989.

Item	Value of Sales ($1,000)				
	Large $250 and Over	Medium $100 to $250	Small $10 to $100	Rural Residences Less than $10	Total
	(Dollars per Farm)				
Assets	1,598,381	810,318	419,313	268,348	447,827
(Percent of All Assets)	(18.6)	(17.6)	(35.7)	(28.1)	(100.0)
Debt	253,938	130,976	63,560	36,317	67,234
(Percent of All Debt)	(19.7)	(18.9)	(36.0)	(25.4)	(100.0)
Equity	1,344,442	679,341	355,752	232,031	380,592
(Percent of All Equity)	(18.4)	(17.4)	(35.6)	(28.6)	(100.0)
Debt-Asset Ratio (%)	15.9	16.2	15.2	13.5	15.0

Source: USDA, January 1991, p. 86.

2. Debt per farm averages well below assets per farm. The debt-asset ratio for all farms, 15 percent in 1989, was low by nonfarm industry standards and suggests a strong financial position. Approximately 5 percent of farms were judged to be financially vulnerable, defined as debt-asset ratios over 40 percent and negative cash flows. However, that percentage is probably *structural*: It is quite normal for some operators to be highly leveraged to get started in farming or be beset by bad luck or poor management even in a generally prosperous farming economy.

3. Large farms operate with higher debt-asset ratios than do small farms. Differences in leverage among farm sizes in 1989 were less than in previous years, however. Debt-asset ratios averaging 15 percent over all farms in 1989 were considerably lower than typical debt-asset ratios of 50 percent or more for nonfarm firms.

   Neither large nor small farms are utilizing their considerable potential borrowing capacity (credit worthiness) to invest in productive assets. Small farms frequently lack profitable investment opportunities. Caution, apparent in 1989 data in Table 2, originated in part from financial stress experienced in the mid-1980s.

4. Wealth as measured by equity is high among farmers. In 1989, net worth averaged $380,592 over all farms. More meaningful for commercial agriculture is wealth of the quintessential

medium-size family farm, $679,341. Wealth for types of U.S. households based on 1984 data updated to 1989 using the Consumer Price Index was as follows (Bureau of Census, 1989, p. 459):

U.S. Household Type	1989 Wealth
All	$38,987
Married	59,811
College graduate	72,105
Age 55-64	87,915.

The average U.S. farm had a net worth approximately 10 times that of the median net worth of all U.S. households. The quintessential (medium size) family farm had a net worth nearly 10 times that for any category recorded in the Survey of Income and Program Participation, householders age 55-64. Differences might be narrowed but probably not erased if human capital were accounted for. Because medium and large farms receive a substantial portion of government commodity program benefits as noted earlier in Table 1, it follows that government programs transfer dollars from taxpayers to farm families of considerably higher income and wealth.

Economies of Farm Size. Figure 1, derived from farm income and balance sheet data, shows full economic costs per dollar of production (including annualized costs of operator's management, equity capital, and labor) by economic sales class for all U.S. farms. Economies of size are prominent. It costs $2 to produce $1 of output on small farms and under $1 to produce a dollar of output on large farms. *Most economies of size are realized on a quintessential family size farm* with sales of $100,000 to $250,000 per year. However, on average an additional 10 percent reduction in costs can be obtained on larger farms, in part because of market economies (purchasing inputs at a discount, selling produce at a premium). I have been constructing unit cost curves at approximately 5-year intervals since 1960 and find a remarkable similarity among curves over time. The recurring pattern is that adequate size farms are approximately breaking even (covering all costs) while small farms are losing money.

Part-time small farm numbers have not changed much in recent years. About as many part-time operators and their families are entering as are leaving that category. Rural amenities, psychic benefits of the

farm way of life, and tax advantages appear to compensate for low direct monetary rewards, suggesting that such farms are near a social equilibrium. The small farm with a full-time, non-aged operator once dominated farm numbers but has nearly vanished. Operators of such farms have expanded their operations, become part-time operators, have exited farming, or retired. Assuming acceptance of my thesis that small farms remain in farming because they can realize tax advantages and finance consumption for their preferred way of life out of off-farm income, it follows that the economies of size curve in Figure 1 is consistent with an economic equilibrium apparent in only modest changes in numbers of small farms.

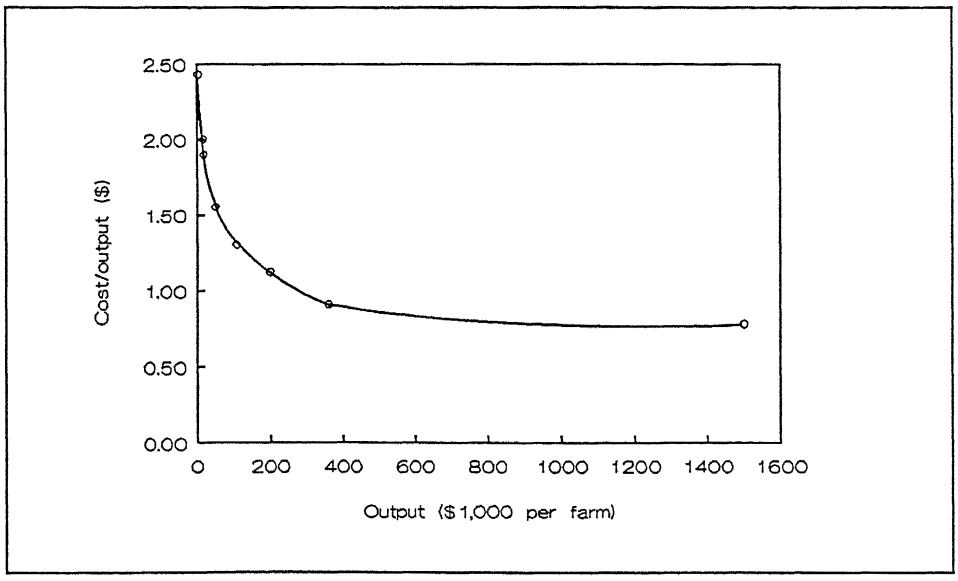

Figure 1. Cost per Unit of Farm Output by Economic Size Class of Farms.

A growing body of research using other methodologies supports results in Figure 1. Studies of economies of size estimated from farm types specializing in various enterprises give results similar to the pattern in Figure 1. So called "engineering studies" of a hypothetical cost-minimizing farming resource-enterprise unit show patterns similar to that in Figure 1 but economies of size are not as pronounced (see OTA; Richardson, Smith, and Knutson; Helmers, El-Osta, and Azzam).

Farm Prices. The substantial decline in *commodity terms of trade* apparent in Figure 2 would appear to be inconsistent with the above conclusion that commercial farms with sales of $100,000 or more per year have covered all costs and even increased real net income over time. Commodity terms of trade as measured by the parity ratio (the ratio of prices received by farmers for crops and livestock to prices paid by farmers for inputs) have been halved since 1910-14 -- a standard base period. Some have interpreted this to mean that farmers are paid half of a fair price, are underpaid for resources, and are predestined to chronic low returns. That interpretation is incorrect.

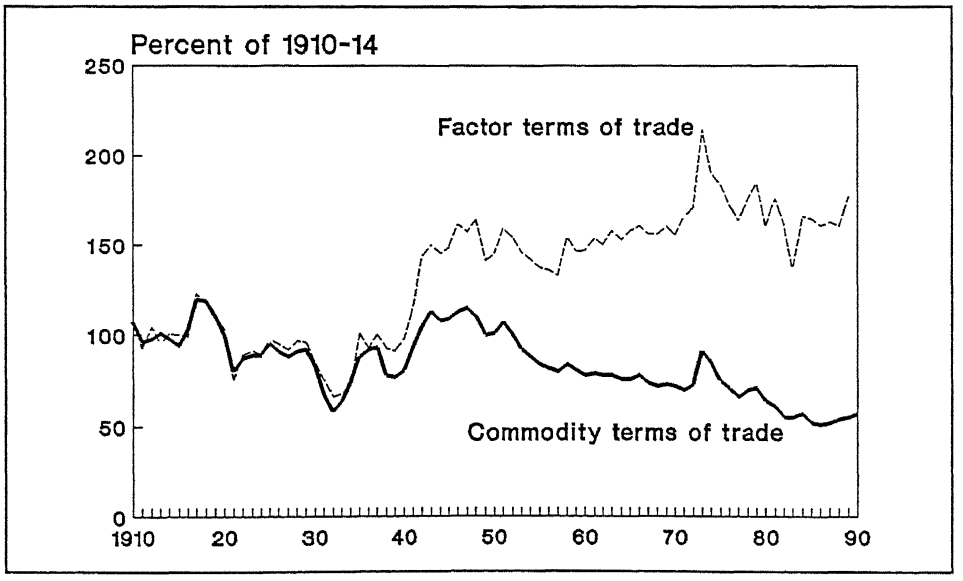

Figure 2. Commodity and Multifactor Terms of Trade.
Source: U.S. Department of Agriculture (April 1990) and Council of Economic Advisors.

The parity ratio measures terms of trade for *commodities*. Because farmers commit *resources* and not products to the production process, what counts is factor or *resource terms of trade*. In 1989 farmers produced 3.2 units of output for the same volume (real cost) of resources producing 1.0 unit of output in 1910-14 (multifactor productivity data from Council of Economic Advisors, p. 396). That means they required only 1/3.2 or 31 percent as much price to cover all costs in 1989 as they did in 1910-14. But commodity terms of trade were 55 percent of the 1910-14 level in 1989. Real or factor terms of trade thus were 3.2(55) = 177 in 1989 or 77

percent higher than in 1910-14 (see Figure 2). Productivity gains have benefitted farmers' economic position mightily.

Government commodity program payments, greater farm size, and off-farm earnings of farm people have improved the economic position of farmers much more than indicated by factor terms of trade alone. Even those persons displaced from farming by labor-saving technology have made substantial economic gains on average for themselves and the nation (Perry, Schreiner, and Tweeten).

Rates of Return. Rates of return on resources of reasonably well managed commercial farms have averaged at least as high as returns on alternative investments. Real rates of return typically average approximately 10-15 percent of equity on farms with sales of $250,000 or more, 5-10 percent on farms with sales of $100,000 to $250,000, and average negative on small farms (see Tweeten, 1988). Even larger farms experienced negative returns in the mid-1980s, however, and capital losses from falling land prices were massive.

Low returns in the mid-1980s manifest a phase of the perennial economic instability problem rather than a nonexistent chronic low rate of return on resources of commercial farms. Negative rates of return on small farms reflects their inability to achieve economies of size. Studies (Tweeten, 1988; 1989b, Ch. 4) examining in depth the question of farm returns conclude that *commercial* farmers are unlikely to experience chronically low rates of return on resources with or without government commodity supports.

Other Characteristics of Farms. Table 3 presents data from the 1987 Census of Agriculture showing legal organization, tenure, and off-farm employment of farm operators. Most farms are sole proprietorships (87.2 percent in 1987). Only 0.3 percent of all farms were corporations other than family held in 1987, the same percentage as in 1982. Arbitrarily classifying industrial-type corporate and partnership farms as well as farms hiring more than half of their labor as nonfamily types, then family farms account for about 95 percent of all farms and 53 percent of all production (Tweeten, 1984, p. 8). Large corporate farms are prominent among fruit and vegetable farms in California, Florida, and Texas, and on large-scale livestock operations.

Nearly three out of five farm operators are full owners (Table 3). Only one out of eight farmers is a full tenant. The trend in recent decades has been toward part-ownership, especially among commercial farmers. Part-owner farms average nearly twice as much area per farm as other farms. Part-owners operate only 29

percent of all farms but 54 percent of farmland. Full-ownership is especially prevalent on small farms. Part-owner farm families enjoy the advantages of security and an investment outlet of an owned homestead portion plus the economies of size achieved with minimal capital requirements by renting land.

Table 3. Selected Characteristics of Farms, 1987.

Characteristic	Percent of Farms
Legal Organization	
Sole Proprietorship	87.2
Partnership	9.6
Corporate, Family	2.9
Corporate, Other than Family	0.3
	100.0
Tenure of Operator	
Full Owner	59.3
Part Owner	29.2
Tenant	11.5
	100.0
Off-farm Employment of Operators	
None	43.1
1 - 99 Days	10.2
100 - 199 Days	9.1
200+ Days	37.6
	100.0

Source: See Annex Table 1.

The proportion of farmland owned by nonfarmers remained unchanged at 36 percent in the years covered by the 1978, 1982, and 1987 censuses of agriculture. About half of this land is owned by retired farm operators or their spouses. Thus approximately one-fifth of farmland is not owned by present or past farm operators or their spouses. Farm families control most farm real estate assets.

Several highlights are noted from enterprise receipt data by sales class (see Annex Table 1):

1. Large farms predominate in production of fruits, vegetables, and horticultural crops and cattle and calves.
2. Medium and small family farms are prominent in production of grains, hogs, and dairy.
3. Rural residences emphasize production of tobacco, forages (hay, silage, pasture etc.), and cattle and calves.
4. Government supported crops, livestock, and livestock products are concentrated on small and medium size farms. Grains, cotton, dairy, and sheep and lamb production supported by commodity programs accounted for 23 percent of production on large farms and 27 percent of production on small farms but for 55 percent of production on farms with sales of $10,000 to $250,000 in 1987.
5. Overall, only 38 percent of farm output, as measured by market value in 1987, potentially was covered by commodity programs. Many operators particularly on small and large farms chose not to participate in programs so the actual portion of output covered by programs was less than indicated above.
6. Cattle and calf operations are the most numerous type of farm for every size classification. Cash grain types of farms are also very frequent among medium and small size farms.

Other notable features of American farms are:

1. Females were the operators of 6 percent of all farms in 1987. That number substantially underestimates the role of women on farming decisions. On family farms, major decisions often are made jointly and coequally by husband and wife although the husband is listed as the sole operator.
2. Blacks were operators of only 2 percent of all farms in 1987. Their share of commercial farm operators was even less.
3. The traditional family farm structure is for the operator and family to reside on the farm. However, 21 percent of farm operators listed nonfarm residence in 1987.

4. The family farm is not threatened by foreign ownership. Corrected for shares that Americans own in foreign firms buying land in the United States, less than 1 percent of the nation's farmland is foreign owned. Foreign ownership is much higher in some localities. This accounts in part for what appears to be an irrational fear by some Americans of foreign takeover of food production.

5. Excess farm capacity, approximately 8 percent of farm output at prices of the mid-1980s, dropped to a low level by 1991. Excess farm labor, once over 40 percent of farm labor, also dropped to a low level. This means that disequilibrium, measured by resources and output in excess of those remaining in a well-functioning market, is now minimal. That conclusion should not be interpreted to mean that adequate food and fiber supplies are threatened by future shortages of farm laborers and operators. Truly outstanding management and entrepreneurship have been and always will be in short supply, but no special measures are needed to draw new operators into farming. The market and generous parents along with public programs of general and vocational education will ensure a plentiful supply of operators.

The above indicators suggest that family farm operators control most decisions on farms although decisions increasingly are shared with spouses, bankers, bureaucrats, and a host of other participants in agriculture. Recent data are not available, but extrapolation from the 1970s suggests that vertical integration accounts for about 10 percent of all farms (see Tweeten, 1984, p. 17 for sources). Vertical integration combines two or more major components of the input supply-farm-product marketing stages in one firm. An example is the integrated poultry firm engaged in producing chicks and feed, and supplying these to contracting growers who for a flat fee raise broilers with their labor and housing, and who then turn the broilers back to the integrator for slaughter and processing. Vertical coordination, prominent for years in production of broilers, is rapidly advancing in beef and pork production. Grower-farmers are not coerced to sign production contracts; most are eager participants -- queues are often long. Growers can become independent producers if contracts are unsatisfactory. The freedom of entry and exit, alternatives, and incentives required to maintain grower

participation minimizes opportunity for exploitation by contractors even though contracting firms are large relative to grower firms.

Environment and Natural Resources

Farmland irrigated fell by 1.6 million hectares from 1978 to 1987. Irrigated area will continue to drop in the Southern High Plains of Texas and Oklahoma and in parts of California as water supplies are depleted. The latter will be caused in part by growing urban demand and by declining federal subsidies to irrigation. Area in crops such as cotton, alfalfa (for dairy production), and rice with low value per unit of irrigation water will be curtailed to provide water for urban areas.

Extensive analysis indicates environmental problems of agriculture are manageable and are neither the basis for panic nor complacency (see Tweeten, forthcoming). Principal environmental problems are soil erosion; air, water, and food contamination by pathogens and toxic or carcinogenic chemicals; and limits to energy, phosphate, and other natural resources. The most serious environmental problem of agriculture is soil erosion. Several studies indicate that continuation of past erosion trends will reduce American agricultural productivity approximately 5 percent in a century. Improved technology can more than offset this loss but at a cost in research and education. Approximately 120 million hectares of cropland are lost to urban and other nonfarm development purposes each year (CAST). The rate of shift has fallen with slowing population growth and income growth.

Farm Numbers

The above perspective prepares us for scrutiny of the viability of family farms. Farm numbers declined from 2.2 million in 1982 to 2.1 million in 1987, an annual rate of 1.4 percent (Table 4). The extreme financial stress of the period raised the rate; pressures to break up farms on paper to avoid government program payment limitations reduced the rate. The rate of decline in farm numbers has been slowing for some time in part because the pace of technological change has slackened and because small farms with full-time operators, once the largest single category of farm operators, have nearly completed their adjustment out of agriculture. No

technology on the horizon poses anywhere near the operator-displacement capacity of the tractor and its complements.

Table 4. Farm Numbers and Shares, 1982 and 1987.

Item	Value of Sales ($1,000)				
	Large $250 and Over	Medium $100 to $250	Small $10 to $100	Rural Residences Less than $10	Total
1982	86,468	215,912	840,583	1,096,337	2,240,976
(Percent of Total)	(3.9)	(9.6)	(37.5)	(49.0)	(100.0)
1987	93,171	202,550	763,852	1,028,186	2,087,759
(Percent of Total)	(4.5)	(9.7)	(36.6)	(49.2)	(100.0)

Source: Census of Agriculture (Bureau of the Census).

If farm numbers continue to decline at a rate of 1.4 percent per year to year 2000 and 1 percent per year from year 2000 to year 2020, then numbers will be as follows:

	(Million Farms)
1987	2.1
2000	1.8
2020	1.4.

Stanton and Olson present a similar number for year 2000.

In 1987, 495,816 farm operators were between 55 and 64 years of age. That means that approximately 50,000 farm operators can be expected to retire or die each year for the next decade. The drop in farm numbers by only 31,000 per year from 1982 to 1987 meant that many new operators entered farming. In fact, both entry and exit were large. Gale and Henderson (p. 5) estimate that 75,373 farmers entered annually while 106,017 farmers exited annually in the 1982-87 period.

U.S. agricultural census data for 1982 and 1987 in Table 4 evidence the "dual structure" and "disappearing middle" frequently mentioned in previous literature. That is, a few large farms account for most output, and small, mostly part-time, farms dominate farm numbers. The small and middle-size groups comprised of farms too small to reap all economies of size and too large to permit full-time off-farm jobs for operators

continued to be marginalized. However, this "disappearing middle" group declined in numbers only a little faster than other farms from 1982 to 1987. Small farms defined as those with sales of $10,000 to $100,000 per year decreased from 38 percent of all farms in 1982 to 37 percent of all farms in 1987. The share of rural residence farms (sales of less than $10,000) held steady at 49 percent of all farms. The decline in full-time small farms was offset by gains in part-time small farms to maintain shares. Large farms (sales of $250,000 and over) increased share from 3.9 to 4.5 percent of all farms. Medium farms (sales of $100,000 to $250,000) declined in numbers but slightly increased share. In short, the farm size structure is changing but at a glacial pace. The great farm-urban exodus of the 1940s, 1950s, and 1960s has slowed to a trickle.

At issue is how a family farm economic unit with its massive capital requirements can be refinanced from generation to generation. The $1 million of assets required for an economic farming unit preclude ownership with full equity by retirement, once an attainable goal. Even a (say) 25 percent equity of $250,000 required to own an economic farming unit is beyond reach of most would-be operators. Several strategies and compromises to circumvent such constraints and form economic units will continue to be successful in the future:

Assistance from Parents. Without generous mothers and fathers, the family farm as we have known it would last one generation. We will continue to have generous parents passing their farming skills and assets to their sons and daughters, ensuring survival of the family farm.

Leasing. The traditional tenure "ladder" for an operator progressed from hired worker to tenant to owner. Operators will continue to use leasing of equipment, rental of land, and custom hiring of machinery and tasks to reduce capital requirements for an economic unit.

Off-farm Earnings. Many farm families will continue to earn substantial income from off-farm sources. An efficient, economic size unit requires full-time commitment of the operator to the farm, but a spouse may find off-farm work feasible.

Management consultants, computerized information systems, and public extension services can help. These are but a few strategies for growth and survival; ingenious families will come up with many more.

Conclusion

The family farm is not an endangered species. It will remain the backbone of agriculture for generations to come, although in declining numbers. It is economically viable as measured by income, net worth, and rate of return.

Agriculture will continue to adapt to changing circumstances, and could adapt to the absence of commodity programs and trade restrictions after a transition period. Problems of economic instability, soil erosion, poverty on small farms, and some loss of family farms over time are real. These problems will not be resolved without a major restructuring of public policy.

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Annex Table 1. Legal Organization, Tenure, Off-farm Employment, and Enterprise Shares by Sales Class of Farms, U.S., 1987.

Item	Value of Sales ($1,000)				
	Large $250 and Over	Medium $100 to $250	Small $10 to $100	Rural Residences Less than $10	Total
Legal Organization	(Percent of Farms in Legal Organization Class)				
Sole Proprietorship	54.8	76.5	86.4	92.8	87.2
Partnership	23.0	15.7	11.0	6.2	9.6
Corporate, Family Held	19.8	7.3	2.4	0.9	2.9
Corporate, Other Than Family	2.4	0.5	0.2	0.1	0.3
	100.0	100.0	100.0	100.0	100.0
Tenure of Operator	(Percent of Farms in Sales Class)				
Full Owner	32.2	27.0	47.1	77.2	59.3
Part Owner	54.7	58.1	37.4	15.1	29.2
Tenant	13.0	14.9	15.5	7.7	1.5
	100.0	100.0	100.0	100.0	100.0
Off-Farm Employment of Operator	(Percent of Farms in Off-Farm Work Category)				
None	77.4	73.1	50.3	29.1	43.1
1 - 99 Days	9.5	13.3	12.8	7.8	10.2
100 - 199 Days	3.7	4.6	9.6	10.1	9.1
200+ Days	9.4	9.0	27.3	53.0	37.6
	100.0	100.0	100.0	100.0	100.0
Commodity	(Percent of Receipts by Enterprise)				
Grains	10.3	32.1	35.5	17.9	20.8
Cotton	3.5	3.5	2.0	0.5	3.1
Tobacco	0.4	1.4	2.8	6.3	1.3
Hay, Silage, & Seed	1.3	1.6	3.1	8.2	1.9
Vegetables, Fruits, & Nursery	18.3	6.7	6.7	6.2	12.9
Other Crops	4.5	2.5	1.5	0.5	3.3
Poultry & Eggs	14.3	6.1	1.4	0.5	9.4
Dairy	8.8	18.5	13.2	0.5	11.8
Cattle & calves	30.4	16.3	24.4	49.5	26.3
Hogs	6.2	10.1	7.5	4.1	7.3
Other livestock	2.0	1.1	1.9	5.8	1.9
	100.0	100.0	100.0	100.0	100.0
Hectares per Farm	1,039	450	193	53	187

Source: Census of Agriculture (Bureau of the Census).